Wideband Scanning Superconducting Quantum Interference Device (SQUID) Susceptometers for Nanomagnetic Materials Research and Education

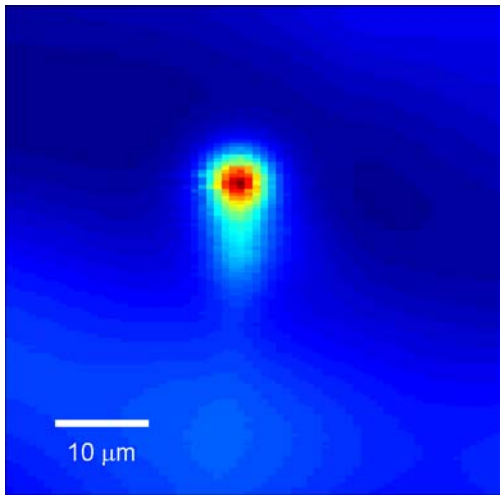
Prototype Device:

- Optical lithography
- Nb/AlOx/Nb technology
- 4 μm diameter sensor loop

First operation in voltage-bias mode with Series SQUID Array pre-amplifier for high bandwidth measurements!

Test Image:

- Flux vortex in a Nb thin-film
- Improved sensitivity and symmetry over earlier devices



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Technical Status:

- 3He Cryostat for use of Al sensor loop technology now installed
- Device design optimization proceeding
- High-bandwidth electronics development proceeding

Educational Status:

- All-undergraduate staffing
  - plus high-school students!
- Diverse intern backgrounds
  - including female interns, not pictured!
- Recent graduates placed in engineering jobs and graduate schools
  - including first generation college students!